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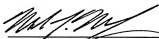
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in the following listed application(s) or patent(s) for which the issue fee has been paid.

<b><u>Patent No.</u></b>	<b><u>Serial No.</u></b>	<b><u>Patent Date</u></b>	<b><u>US Filing Date</u></b>	<b><u>Confirmation No.</u></b>	<b><u>Attorney Docket No.</u></b>
7,456,430 B1	09/544,801	11/25/2008	04/07/2000	1717	SEL 174

Respectfully Submitted,



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(12) **United States Patent**  
Yamazaki et al.

(10) **Patent No.:** **US 7,456,430 B1**  
(45) **Date of Patent:** **Nov. 25, 2008**

- (54) **SEMICONDUCTOR DEVICE AND METHOD FOR FABRICATING THE SAME**
- (75) Inventors: **Shunpei Yamazaki, Tokyo (JP); Jun Koyama, Kanagawa (JP); Toru Takayama, Kanagawa (JP); Toshiji Hamatani, Kanagawa (JP)**
- (73) Assignee: **Semiconductor Energy Laboratory Co., Ltd. (JP)**
- (\*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.
- (21) Appl. No.: **09/544,801**
- (22) Filed: **Apr. 7, 2000**
- (30) **Foreign Application Priority Data**  
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- (51) **Int. Cl.**  
**H01L 29/04** (2006.01)
- (52) **U.S. Cl.** ..... **257/72; 257/347; 257/350; 257/351; 257/344; 257/E27.111; 257/E29.275; 257/E29.278**
- (58) **Field of Classification Search** ..... **257/72; 257/350; 59, 366, 365, 66, 344, 347, 351, 257/E27.111, E29.274, E29.278, E29.293; 349/41, 42, 46**
- See application file for complete search history.

(56) **References Cited**

**U.S. PATENT DOCUMENTS**

- 5,153,690 A \* 10/1992 Tsukada et al. .... 357/23.7
- 5,245,207 A 9/1993 Mikoshiba et al. .... 257/40
- 5,247,190 A 9/1993 Friend et al. .... 257/66
- 5,266,825 A \* 11/1993 Tsukada et al. .... 257/66
- 5,343,063 A \* 8/1994 Yuan et al. .... 257/317
- 5,399,502 A 3/1995 Friend et al. .... 437/1
- 5,402,254 A \* 3/1995 Sasano et al. .... 359/59
- 5,594,569 A 1/1997 Konuma et al. .... 437/88
- 5,643,826 A 7/1997 Ohtani et al. .... 437/88

- 5,671,027 A \* 9/1997 Sasano et al. .... 349/46
- 5,734,185 A \* 3/1998 Iguchi et al. .... 257/336
- 5,767,930 A \* 6/1998 Kobayashi et al. .... 349/42

(Continued)

**FOREIGN PATENT DOCUMENTS**

CN 1123465 A 5/1996

(Continued)

**OTHER PUBLICATIONS**

Schenk, H. et al., "Polymers for Light Emitting Diodes," *EuroDisplay 99, Proceedings of the 19th International Display Research Conference*, Berlin, Germany, Sep. 6-9, 1999, pp. 33-37.

(Continued)

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(57) **ABSTRACT**

The invention primarily provides gate electrodes and gate wirings providing large-sized screens for active matrix-type display devices, wherein, in order to achieve this object, the construction of the invention is a semiconductor device having, on the same substrate, a pixel TFT provided in a display region and a driver circuit TFT provided around the display region, wherein the gate electrodes of the pixel TFT and the driver circuit TFT are formed from a first conductive layer, the gate electrodes are in electrical contact through connectors with gate wirings formed from a second conductive layer, and the connectors are provided outside the channel-forming regions of the pixel TFT and the driver circuit TFT.

**36 Claims, 23 Drawing Sheets**

